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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KEANEY, ELIZABETH MARIE	
ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/801,918	ALTMAN, HERNAN
	Examiner	Art Unit
	Elizabeth Keaney	2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 27 October 2005, with respect to the rejection(s) of claim(s) 1-17 and 19-29 under 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference Kojima et al. (US Patent Application Publication 2002/0191734; hereinafter Kojima).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a multi-headed source and detection system wherein three x-ray sources and associated detectors are utilized in the VCT mode of operation and the NM/SPECT and PET modes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,4,5,7,8,9,10,11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima.

Re claim 1: Kojima discloses, in figure 14 and throughout the disclosure, a method of examining a patient, the method comprising:

- aligning a patient table (16) in an opening (30) of a gantry (15) that includes a CZT photon detector (4; paragraph 188, line 8) and an x-ray source (9);
- imaging a patient utilizing a first imaging modality during a first portion of a scan using the CZT detector; and
- imaging the patent utilizing a second imaging modality during a second portion of the scan using the CZT detector wherein the second imaging modality is different than the first imaging modality (paragraph 69; lines 1-6).

Re claim 3: Kojima discloses moving the patient table along at least one of a patient table orthogonal axis when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 45, lines 1-5).

Re claim 4: Kojima discloses rotating the gantry around a longitudinal axis of the patient table when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 45, lines 11-15).

Re claim 5: Kojima discloses the x-ray source being configured to emit x-rays in a beam having a predetermined fan angle (paragraph 114, lines 13-14), the method further comprising rotating the gantry around the longitudinal axis of the patient table less than one hundred and eighty degrees of rotation when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality (paragraph 125; lines 18-22).

Re claim 7: Kojima discloses moving at least one of the CZT photon detector and the patient table to follow a contour of the patient during at least a portion of the scan (paragraph 45, lines 1-4).

Re claim 8: Kojima discloses the patient includes a radiopharmaceutical (paragraph 44, lines 1-2) and wherein the imaging the patient utilizing a first imaging modality comprises imaging the patient using a nuclear medicine modality (paragraph 43, line 5).

Re claim 9: Kojima discloses imaging the patient using a nuclear medicine modality comprising imaging the patient using SPECT (paragraph 1, line 7).

Re claim 10: Kojima discloses, in figure 16 and throughout the disclosure, imaging the patient using a nuclear medicine modality comprising imaging the patient using a pair of photon detectors (4) using a SPECT modality (paragraph 1, line 7).

The Examiner notes that Kojima discloses a plurality of photon detectors therefore a pair of detectors is present.

Re claim 11: Kojima discloses imaging a patient utilizing a first imaging modality comprising imaging the patient using a CT modality (paragraph 45, line 11).

Re claim 12: Kojima discloses imaging the patient using a CT modality comprising imaging the patient using a cone-beam CT modality (paragraph 188, line 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima as applied to claim 1 above, and further in view of Silver et al. (US Patent 6,466,638; hereinafter Silver) and Ashburn (US Patent 6,147,352).

Kojima teaches all the limitations as shown above, including the gantry of the multi-modality system to be in an o-ring configuration.

However, fails to teach or fairly suggest the gantry to be in a c-arm configuration.

Silver discloses the substitution of a c-arm for an o-ring gantry configuration within a CT imaging system (column 1, lines 22-29).

Ashburn discloses the substitution of a c-arm for an o-ring gantry configuration within a SPECT imaging system (column 2, lines 26-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a c-arm gantry configuration within the system disclosed by Kojima because it would allow for greater access to the patient (Silver, column 2, lines 24-25) and would allow minimal movement of the patient (Ashburn, column 3, lines 1-3).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima as applied to claim 1 above, and further in view of Besson (US Patent 6,324,247).

Kojima teaches all the limitations as shown above, including a source configured to emit x-rays in a beam having a predetermined fan angle (paragraph 114, lines 13-14).

However Kojima fails to teach or fairly suggest rotating the gantry around a longitudinal axis of the patient table approximately one hundred and eighty degrees plus the fan angle of rotation when imaging the patient utilizing at least one of the first imaging modality and the second imaging modality.

Besson discloses rotating the gantry around the longitudinal axis of the patient table approximately one hundred and eighty degrees plus the fan angle within a CT imaging modality.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement half-scan imaging within the system disclosed by Kojima because it uses the minimum amount of data to produce an accurate three-dimensional image.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima as applied to claim 1 above, and further in view of Hsieh et al. (US Patent 6,256,368; hereinafter Hsieh).

Kojima teaches all the limitations as shown above.

However, Kojima fails to teach or fairly suggest monitoring a cyclic physiological function of the patient and triggering at least one of the first modality and the second modality during at least one preselected portion of the cyclical physiological function.

Hsieh discloses using an EKG monitor to control scanning and acquisition of image data in a CT imaging system (column 5, lines 63-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to included an EKG monitor to control the scanning and acquisition of image data in the CT imaging modality of Kojima because the desired period of the heart beat cycle can be successfully imaged without exposing the patient to extraneous radiation.

Claims 14,15,17,24-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Silver and Ashburn.

Re claim 14: Kojima teaches all the limitations as shown above.

However, Kojima fails to teach or fairly suggest using a c-arm gantry within a multimodality system.

Silver discloses the substitution of a c-arm for an o-ring gantry configuration within a CT imaging system (column 1, lines 22-29).

Ashburn discloses the substitution of a c-arm for an o-ring gantry configuration within a SPECT imaging system (column 2, lines 26-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute a c-arm gantry configuration within the system disclosed by Kojima because it would allow for greater access to the patient (Silver, column 2, lines 24-25) and would allow minimal movement of the patient (Ashburn, column 3, lines 1-3).

Re claim 15: Silver discloses, in figure 1a and throughout the disclosure, the gantry (1) is rotatably coupled to the gantry holder.

Ashburn discloses, in figure 1 and throughout the disclosure, the gantry (26) is rotatably coupled to the gantry holder (36).

Re claim 17: Kojima discloses the x-ray source comprising a cone-beam x-ray source (paragraph 188, line 3).

Re claims 24 and 25: Kojima discloses the system being configured to control at least one of the patient table and the gantry to cause the detector to follow a contour of the object to be scanned (paragraph 45, lines 3-5).

Re claim 26: Kojima discloses an imaging isocentric area located between the x-ray source and the detector, the imaging isocentric area remaining substantially constant when the gantry moves along the image acquisition path (paragraph 45, lines 11-15).

Re claim 29: Ashburn discloses, in figure 1 and throughout the disclosure, the imaging system comprising a gantry support base (34) wherein the gantry support base is a mobile (32) support base.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima, Silver and Ashburn as applied to claims 14 and 15 above, and further in view of Besson.

Kojima, Silver and Ashburn teach all the limitations as shown above, including an x-ray source configured to emit x-rays in a fan-beam.

However, they fail to teach or fairly suggest translating the gantry an angular distance of approximately one hundred and eighty degrees plus the fan angle of the x-ray source.

Besson discloses rotating the gantry around the longitudinal axis of the patient table approximately one hundred and eighty degrees plus the fan angle within a CT imaging modality.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement half-scan imaging within the system disclosed by Kojima, Silver and Ashburn because it uses the minimum amount of data to produce an accurate three-dimensional image.

Claims 14 and 19-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima in view of Silver and Yamakawa et al. (US Patent 6,373,060; hereinafter Yamakawa).

Re claim 14: Kojima and Silver teach all the limitations as shown above.

However, they fail to teach or fairly suggest a SPECT system using a c-arm gantry.

Yamakawa discloses using a c-arm gantry within a SPECT system (figure 33).

It would have been obvious to one of ordinary skill in the art to modify the system disclosed by Kojima to include a c-arm gantry because it allows for easy access to the patient and minimizes movement of the patient.

Re claims 19 and 20: Yamakawa discloses, in figure 33 and throughout the disclosure, the detector comprising a pair of detectors inclined at an angle of approximately ninety degrees with respect to each other.

Re claim 21: Kojima discloses the detectors comprising CZT (paragraph 188, line 8).

Re claim 22: Silver discloses, in figure 1a and throughout the disclosure, the x-ray source is positioned substantially perpendicularly opposed to the x-ray detector.

Re claim 23: Kojima discloses the detector comprising CZT (paragraph 188, line 8).

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima, Silver and Ashburn as applied to claim 14 above, and further in view of Ivan et al. (US Patent 6,364,526; hereinafter Ivan).

Kojima, Silver and Ashburn teach all the limitations as shown above.

However, they fail to teach or fairly suggest the gantry support base coupled to a rail system.

Ivan discloses, in figure 7 and throughout the disclosure, a gantry coupled to a ceiling rail system, the rail system operable to move the gantry unit along at least one axis.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the system disclosed by Kojima, Silver and Ashburn within a rail system because it would allow the gantry to be more precisely controlled.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday,Tuesday,Thursday,Friday 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMK

Elizabeth Keaney
Examiner
Art Unit 2882

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER